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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	IB Docket No. 95-91
	)	GEN Docket No. 90-357
Establishment of Rules and Policies for the	)	RM No. 8610
Digital Audio Radio Satellite Service in the	)	PP-24
2310 - 2360 MHz Frequency Band	)	PP-86
	)	PP-87

OPPOSITION TO PETITIONS FOR RECONSIDERATION

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SUMMARY

CD Radio Inc. opposes the petitions filed by the Cellular Phone Taskforce and the Consumer Electronics Manufacturers Association seeking reconsideration of the FCC's decision to adopt service rules for the satellite Digital Audio Radio ("satellite DARS") service. As the original applicant for a satellite DARS authorization, CD Radio has waited for seven years to begin the process of constructing a satellite DARS system. The American public has been delayed equally long in receiving high-quality multi-channel audio services that are available coast-to-coast in mobile platforms such as automobiles. Unnecessary further delays are not in the public interest.

The Taskforce seeks the imposition of a specific power flux density limit on satellite DARS space-to-earth transmissions. However, the Commission has already established comprehensive rules to minimize the effects of radiofrequency radiation, and CD Radio will comply with those rules. If the Taskforce seeks to alter the agency's radiofrequency policies, the Commission's pending proceeding reconsidering some aspects of those rules is the appropriate forum. Indeed, the Taskforce has already requested similar relief in that proceeding. The instant docket covering licensing and operating rules for satellite DARS is not the appropriate forum for the Taskforce's proposal on radiofrequency radiation.

CEMA's reconsideration request appears to be another in a series of pleas either to move the satellite DARS allocation to L-Band or to reduce the out-of-band emission protection that adjacent Wireless Communications Service (WCS) licensees must provide to satellite DARS receivers. The Commission made its decision to allocate S-band spectrum to satellite DARS in January of 1995. CEMA's request, therefore, is merely an untimely effort to seek

reconsideration of that two-year-old allocation order. Moreover, since CEMA filed its reconsideration request, the Commission has already modified the WCS rules making CEMA's petition moot.

All other points in the CEMA request would only burden the satellite DARS service in illogical ways and are based on misleading information. CEMA has self-servingly claimed that satellite DARS will not work. This ignores the commitment of two entities to pay over $170 million dollars for spectrum under the certainty that the system will operate successfully. Moreover, CEMA bases its conclusions on misinterpretations of comparative test data that did not even use a spatially diverse satellite DARS system such as CD Radio's. Finally, CEMA's misplaced suggestions to graft terrestrial build-out requirements on an inherently coast-to-coast satellite service ignore the compelling commercial incentives satellite DARS licensees have to ensure delivery of high quality audio signals to the American public.

For the reasons set forth herein, the petitions for reconsideration should be denied.

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OPPOSITION TO PETITIONS FOR RECONSIDERATION

CD Radio Inc. ("CD Radio"), through its counsel, herein opposes the two petitions for reconsideration submitted in the above-captioned matter.[1] On March 3, 1997, the Commission detailed its plan to license two providers of satellite Digital Audio Radio Service ("satellite DARS") in its Report and Order, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking ("Satellite DARS Report and Order").[2] CD Radio applauds the Commission's licensing of two satellite DARS providers to facilitate "continuous nationwide

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[1] Consumer Electronic Industries Association ("CEMA"), Petition for Reconsideration, IB Docket No. 95-91, Establishment of the Rules and Policies for the Digital Audio Radio Satellite Service in the 2310 - 2360 MHz Frequency Band, March 27, 1997 ("CEMA Petition for Reconsideration"); Cellular Phone Taskforce ("Taskforce"), Petition for Partial Reconsideration, IB Docket No. 95-91, Establishment of the Rules and Policies for the Digital Audio Radio Satellite Service in the 2310 - 2360 MHz Frequency Band, February 14, 1997 ("Taskforce Petition for Partial Reconsideration").

[2] Report and Order, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, IB Docket No. 95-91, Establishment of the Rules and Policies for the Digital Audio Radio Satellite Service in the 2310 - 2360 MHz Frequency Band, March 3, 1997 ("Satellite DARS Report and Order").

radio programming with compact disc (CD) quality sound."[3] It files this Opposition to support the Commission's determinations that the provision of satellite DARS is environmentally safe, that S-Band is an appropriate frequency for satellite DARS, and that additional build-out requirements are not necessary to ensure the licensees' expedient provision of service and would be inefficient.

I. TASKFORCE'S PETITION FOR PARTIAL RECONSIDERATION SHOULD BE DENIED BECAUSE IT IS PROCEDURALLY INAPPROPRIATE AND WITHOUT MERIT.

The Cellular Phone Taskforce ("Taskforce") has asked the Commission to "reconsider its decision not to apply power flux-density (pfd) limits on satellite DARS networks."[4] In doing so, the Taskforce primarily relied upon a report previously submitted in the Commission's proceeding on the environmental effects of radiofrequency radiation.[5] The concerns raised in this report, and reiterated in the Taskforce Petition for Partial Reconsideration, are not appropriately raised in this proceeding and, in any case, are wholly without merit.

On August 1, 1996, the Commission amended its rules to adopt comprehensive guidelines for evaluating the environmental effects of radiofrequency radiation from FCC-

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[3] Satellite DARS Report and Order ¶ 1.

[4] Taskforce Petition for Partial Reconsideration at 1, *citing* Satellite DARS Report and Order ¶ 114.

[5] *See* Arthur Firstenberg, "Microwaving Our Planet: The Environmental Impact of the Wireless Revolution" (Cellular Phone Taskforce 1996), *accompanying* Taskforce Petition for Reconsideration, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, February 17, 1997.

regulated transmitters.[6] The guidelines were the result of the Commission's extensive and on-going analysis of radiofrequency safety and health. They "represent a consensus view of the federal agencies responsible for matters relating to the public safety and health."[7] Specifically, the rules adopted by the Commission limit field strength, power density and localized absorptions pertaining to portable transmitting devices.[8] Such limitations are directly applicable to satellite DARS licensees.[9]

The Taskforce has raised its concerns with the established rules regulating radiofrequency radiation in the Commission's radiofrequency radiation proceeding, where they will be considered in an appropriate context. This proceeding, licensing two providers of satellite DARS, is not the proper venue for the Commission to address a repetition of Taskforce's concerns.

In any event, the Taskforce's concerns are without merit because CD Radio, consistent with its licensee obligations, will conform its provision of satellite DARS to the Commission's

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[6] Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, 11 FCC Rcd 15123 (1996) ("Radiofrequency Radiation Report and Order").

[7] Radiofrequency Radiation Report and Order at 2. The guidelines adopted are generally based on recommendations from the National Council on Radiation Protection and Measurements ("NCRP") and guidelines contained in the Radiofrequency Safety Standard developed by the Institute of Electrical and Electronic Engineers, Inc. ("IEEE") and adopted by the American National Standards Institute ("ANSI"). *See id.* at 1 n.1.

[8] Radiofrequency Radiation Report and Order at 1-2.

[9] Generally the limits on radiation are applicable to transmitters operating at frequencies from 300 kHz to 100 GHz. Radiofrequency Radiation Report and Order at 1. Satellite DARS will operate in the 25 MHz of the S-Band located between 2320 and 2345 MHz. Satellite signals at less than -130 dBW/M^2/4 kHz will be well under those limits. Additionally, satellite DARS consumer units will not contain transmitters and, thus, will pose no radiation risk.

agreed upon safe radiation limits, as well as any future modifications to its guidelines. Allowing CD Radio to comply with the established radiofrequency guidelines is consistent with the Commission's view that "[a]pplicants are in a better position than the Commission to make necessary power trade-offs to implement their satellite DARS systems ... [A]doption of a specific pfd limit is unnecessary."[10] Thus, the Taskforce's Petition for Partial Reconsideration, requesting pfd limits based on alleged environmental and health concerns, should be denied.

II. CEMA'S PETITION FOR RECONSIDERATION SHOULD BE DENIED BECAUSE IT IS INCONSISTENT WITH THE BASIS FOR ESTABLISHMENT OF SATELLITE DARS IN THE S-BAND AND IS SUBSTANTIVELY INCORRECT.

The Consumer Electronics Manufacturers Association ("CEMA"), in its Petition for Reconsideration, alleged that S-Band is not viable for satellite DARS and, if implemented, would require additional coverage, performance and build-out obligations on licensees.[11] CEMA's view fundamentally ignores the extensive procedural history establishing S-Band frequency for

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[10] Satellite DARS Report and Order ¶ 114.

[11] CEMA Petition for Reconsideration at 1-2. One primary reason prompting CEMA's opposition to the use of S-Band for satellite DARS is to protect the commercial use of the adjacent Wireless Communications Service ("WCS") band. *See* CEMA Petition for Reconsideration at 3-4 ("[T]he out-of-band emission limits imposed on the WCS for the supposed protection of satellite DARS licensees, will significantly impair the ability of licensees to utilize the WCS for mobile applications."). CEMA's contentions ignore the substantial international and domestic efforts of the FCC to create the satellite DARS allocation. Indeed, 25 MHz of the satellite DARS allocation was reallocated to WCS after interference concerns with Canada made their continued use for satellite DARS problematic. Moreover, by its Order on Reconsideration in that proceeding, adopted after CEMA filed its Petition for Reconsideration in the instant docket and at the outset of the satellite DARS auction, the FCC modified these limits rendering CEMA's concern moot. *See* Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), GN Docket No. 96-228, FCC 97-112, April 7, 1997 ("WCS Final Rule"). In any event, CEMA's WCS concerns do not provide a rationale for promulgating build-out requirements that are neither necessary nor appropriate.

satellite DARS. Its assumptions supporting its request for build-out obligations are derived from misleading and incomplete information. Furthermore, CEMA misapprehends the technical viability and commercial nature of satellite DARS and thus utterly fails to consider the compelling economic incentives satellite DARS providers will have to provide a high quality service at low cost. For these reasons, CEMA's Petition for Reconsideration should be denied.

A. It Is Procedurally Inappropriate for CEMA To Dispute the Allocation of S-Band Frequency to Satellite DARS in This Proceeding.

On January 18, 1995, following more than five years of evaluation, the Commission allocated S-Band to satellite DARS.[12] The Commission's designation of S-Band for domestic satellite DARS is consistent with the international frequency allocations made at the 1992 World Administrative Radio Conference (WARC-92).[13] At this conference, three different Broadcasting Satellite Service ("BSS") (sound) allocations were adopted, with S-Band selected for satellite DARS use in the United States. Although the United States considered L-Band frequencies as well, L-Band was rejected because it is already used for critical government services in the United States, and S-band has been shown to be suitable for satellite DARS.[14]

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[12] Amendment of the Commission's Rules with Regard to the Establishment and Regulation of New Digital Audio Radio Services, 10 FCC Rcd 2310 (1995) ("Satellite DARS Allocation Order").

[13] *See* International Telecommunication Union, *Final Acts of the World Administrative Radio Conference* (Malaga-Torremolinos, 1992).

[14] Satellite DARS Report and Order ¶ 38; *see* CD Radio, *ex parte* filing by Robert Briskman, regarding the submission of CEMA, January 31, 1997 ("CD Radio January 31, 1997 *Ex Parte* Filing").

CEMA's Petition for Reconsideration requests the Commission to "consider spectrum other than S-band for satellite DARS."[15] CEMA's request is procedurally inappropriate because over two years have passed since the Commission allocated S-Band to satellite DARS.[16] Indeed, in response to a similar CEMA *ex-parte* presentation,[17] the Satellite DARS Report and Order unequivocally stated that "CEMA's recommendation that the FCC consider other spectrum options for satellite DARS, such as the L-Band, is beyond the scope of this proceeding."[18] Accordingly, the Commission should dismiss CEMA's Petition for Reconsideration as yet another late-filed petition for reconsideration of the two-year-old allocation order.

B. CEMA's Petition for Reconsideration Is Substantively Insupportable Because Its Request for Licensee Build-Out Obligations Is Based on Flawed Assumptions Derived from Misleading and Incomplete Data.

CEMA's petition for additional licensee build-out obligations is based on flawed assumptions and a fundamental misapprehension of the nature of satellite DARS.[19] Instead of evaluating the technical viability of satellite DARS using a two satellite system comparable to that proposed by the licensees, CEMA relied on misleading and incomplete data derived from its

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[15] CEMA Petition for Reconsideration at 3.

[16] *See* Satellite DARS Allocation Order at 2310 ("By this action, the Commission allocates spectrum in the 2310-2360 MHz band for satellite digital audio radio services (DARS).").

[17] CEMA Vision For Digital Audio Radio Services, submitted as an *ex parte* presentation on January 29, 1997 ("CEMA January 29, 1997 *Ex Parte* Filing").

[18] Satellite DARS Report and Order ¶ 38.

[19] CEMA's analysis and procedures were criticized by other parties including the National Association of Broadcasters ("NAB"). Most fundamentally, CEMA failed to present persuasive evidence that the L-Band is significantly better spectrum in which to receive satellite DARS signals. Satellite DARS Report and Order ¶ 38.

limited analysis of a low power satellite at poor elevation angles to the test receivers. Moreover, the satellite CEMA tested lacked the spatial, frequency and time diversity proposed for satellite DARS by CD Radio. As a result, CEMA's assumptions regarding satellite DARS are inherently flawed. Still, the draft test report upon which CEMA bases its view shows the satellite greatly outperformed CEMA's favored EUREKA-147 dual site terrestrial system on three of the six test routes and had slightly better performance on a fourth.

Contrary to one of CEMA's assumptions, satellite DARS signal blockage rates will not be in excess of 90 percent. In fact, new technological improvements will ensure a minimal signal blockage rate.[20] For example, CD Radio's use of a dual satellite system will further reduce multipath and signal blockage by increasing the likelihood of an unblocked, high-elevation satellite at most times. The system tested by CEMA is an inaccurate guide to satellite DARS performance because it did not include such technical elements. As a result, CEMA's categorization of S-Band system satellite DARS as exhibiting extremely poor performance under multipath conditions and its conclusion that S-Band "is unsuitable for commercial applications" are simply not probative.[21]

The satellite system to be implemented by CD Radio will also minimize the necessity for long signal reacquisition delays to well within the threshold of consumer acceptance. It will ensure nationwide high elevation angles from the two satellites, thereby fostering continuous service. Because the success of CD Radio's satellite DARS is dependent on its ability to provide

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[20] *See* CD Radio January 31, 1997 *Ex Parte* Filing, Reference 2.

[21] CEMA Petition for Reconsideration, Exhibit 1 at 2.

coast-to-coast, mobile programming with CD quality sound, innovative technologies are planned to ensure further consumer satisfaction.

CD Radio's S-Band satellite DARS will *not* require excessive "gap filling" terrestrial transmitters in order to provide metropolitan coverage to mobile and stationary receivers. Contrary to CEMA's claimed need for thousands of gap fillers,[22] any need for gap filling transmitters in urban areas will be relatively modest. Although it is clear that satellite delivery at S-Band (or L-Band) would require terrestrial gap fillers in core urban environments, such terrestrial transmitters do not affect the overall quality of coverage in rural and suburban areas. Moreover, the need for terrestrial repeaters in urban areas will be greatly reduced as a result of CD Radio's diverse satellite system. CD Radio obviously has every incentive to continue its satellite improvements and minimize the need for gap fillers while maintaining high service quality and continuity. In short, none of CEMA's technical assertions regarding the provision of satellite DARS are accurate. The Commission should dismiss CEMA's Petition for Reconsideration as substantively insupportable.

C. Commercial Necessity and Competitive Bidding Will Promote the Rapid Deployment of Satellite DARS and the Efficient Use of Satellite DARS Spectrum.

The compelling commercial incentives CD Radio faces to deploy its satellite system and take other necessary measures beneficial to its customers make coverage, performance and build-out requirements in addition to those in the Satellite DARS Report and Order unnecessary and

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[22] CEMA Petition for Reconsideration, Exhibit 1 at 2 ("The propagation characteristics of *S-Band frequencies will require* hundreds, *perhaps thousands, of "gap filling" transmitters* for a single metropolitan market, as well as other costly remedial solutions in order to achieve seamless coverage[.]").

inefficient. CD Radio has every incentive to provide quality service to as many subscribers or listeners as possible in order to fulfill its primary business objectives. As a matter of commercial necessity, CD Radio is obligated to provide satellite DARS expediently to a majority of Americans, including those in rural, suburban and urban areas, or suffer lost commercial opportunities and profits.

The need to generate profits derives, in part, from the license auction process in which CD Radio paid a substantial sum for its right to provide satellite DARS. Due to the competitive bidding process, spectrum warehousing or delayed service is not a viable concern. As the Commission recognizes,

> [i]n general, paying for spectrum provides incentives for the licensee to construct quickly in order to obtain a return on its investment. We therefore conclude that in this particular set of circumstances, an auction for the satellite DARS licenses is likely to promote the rapid deployment of service because the party that is in the best position to deploy satellite DARS technologies and services is also likely to be the highest bidder.[23]

Since CD Radio has begun satellite construction -- which will cost hundreds of millions of dollars -- these business incentives to use the spectrum efficiently have become even stronger. In the Satellite DARS Report and Order, the Commission, consistent with its longstanding practice in satellite regulation and the Satellite DARS Notice,[24] established satellite construction and operational milestones to assure "that licensees are proceeding with their proposals and

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[23] Satellite DARS Report and Order ¶ 150.

[24] Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310 - 2360 MHz Frequency Band, 11 FCC Rcd 1 (1995) ("Satellite DARS Notice").

spectrum is used efficiently."[25] Specifically, satellite DARS licensees must "begin construction of their space stations within one year, launch and begin operating their first satellite within four years, and begin operating their entire system within six years."[26] Licenses will be valid for eight years following the launch of the licensees' satellite during which time the licensees shall file annual status reports.[27]

Thus, efficient use of the spectrum, as required by Section 309(j)(3)(A) and (D) of the Communications Act will be encouraged and expeditious delivery of satellite DARS to the public will be ensured by both the auction process and existing milestones.[28] Any additional requirements would be unnecessary and add costs and risks to the detriment of consumers.[29] CEMA's request for additional performance obligations are therefore unnecessary, inappropriate, inefficient and should be denied.

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25 Satellite DARS Report and Order ¶ 110.

26 *Id.*

27 *Id.* ¶¶ 110-11.

28 Satellite DARS Report and Order ¶ 150.

29 Satellite DARS operations will inherently cover the co-terminus United States, as the rules require, without specific geographic service obligations. Accordingly, CEMA's suggestion that satellite DARS licensees provide substantial service to at least one-third of the population in their service areas within five years of being licensed and two-thirds of the population in the service area within ten years of license is simply illogical. *See* CEMA Petition for Reconsideration at 7. Similarly, CEMA's alternative proposal, to require licensees (1) to provide quality, seamless digital radio coverage to a significant percentage of the stationary and mobile radio receivers within the top 100 metropolitan markets within five years of the license grant; and (2) to demonstrate success in providing seamless quality DAR to mobile users, is unnecessary. *See* CEMA Petition for Reconsideration, Exhibit 2 at 1.

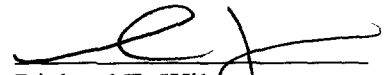
III. CONCLUSION

The Commission should deny both of the Petitions for Reconsideration submitted in this proceeding because each is procedurally inappropriate and substantively flawed. The Taskforce's Petition for Partial Reconsideration repeats concerns that are being addressed in the Commission's radiofrequency radiation proceeding and, moreover, are not necessary in light of established guidelines for safe radiofrequency radiation limits.

CEMA appears to be using this proceeding to re-argue the long-settled allocation of S-Band to satellite DARS. CEMA's suggested performance, coverage and build-out requirements are self-serving and based on flawed assumptions regarding the provision of satellite DARS. CD Radio, as a result of both the Commission's auction process and milestone requirements, faces compelling commercial incentives to implement successfully satellite DARS. As a result, the provision of nationwide service, consistent with the Commission's goals, is already assured. Thus, the Commission needs to take no further action to ensure the success of satellite DARS, except for denial of both Taskforce's and CEMA's Petitions for Reconsideration.

Respectfully submitted,

CD Radio Inc.

By: 

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Dated: May 9, 1997

CERTIFICATE OF SERVICE

I hereby certify that on this 9th day of May, 1997, I caused copies of the foregoing CD Radio Opposition to Petitions for Reconsideration to be mailed via first-class postage prepaid mail to the following:

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